

**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1. (currently amended) An optical multiplex transmission method comprising:

transmitting an optical signal group across a plurality of nodes in network;  
for each of said nodes in said network, accepting from a first optical  
transmission line an a multiplexed optical signal group, said optical sign group having in  
which a plurality of optical wavelength signals of a plurality of wavelengths are  
multiplexed, from a first optical transmission line;

converting at least one of the optical wavelength signals of the first  
wavelength included in the optical signal group, into the a wavelength-converted optical  
wavelength signal having an arbitrary wavelength respectively of the second wavelength  
different from said first wavelength; and

multiplexing said at least one said wavelength-converted of the optical  
wavelength signal signals of the wavelengths except said first wavelength, with at least  
one other of the optical wavelength signals included in said optical signal group wherein  
said wavelength-converted optical wavelength signal is not multiplexed with the optical  
wavelength signal from which said wavelength-converted optical wavelength signal was  
originally converted [[,]] ; and

~~said optical signal of said second wavelength, and then outputting the resulting multiplexed optical wavelength signals to a second transmission line.~~

2. (currently amended) An optical multiplex transmission method comprising:

transmitting optical signal groups across a plurality of nodes in network; for each of said nodes, accepting from a first optical transmission line, a first multiplexed optical signal group having in which optical signals of a plurality of optical wavelength signals wavelengths are multiplexed, from a first optical transmission line, and accepting from a second optical transmission line a second multiplexed optical signal group having in which optical signals of a plurality of optical wavelength signals wavelengths are multiplexed, from a second optical transmission line;

converting a first the optical wavelength signal of the first wavelength included in the first optical signal group, into a second converted the optical wavelength signal, whose wavelength is of the second wavelength different from that of said first optical wavelength signal;

multiplexing at least one of the optical wavelength signals included in said first optical signal group, at least one of the optical wavelength signals included in the second optical signal group, and said the second converted optical wavelength signal of said second wavelength, and then outputting the resulting multiplexed optical wavelength signals to a third optical signal line; and

multiplexing at least one of the optical wavelength signals from said first optical signal group aside from the except the optical signals to be outputted to the third

optical signal line, ~~included in said first optical signal group~~, and at least one of the optical signals from said second optical signal group aside from ~~except~~ said optical signals to be outputted to said third optical signal line, ~~included in said second optical signal group~~, and then outputting the resulting multiplexed optical wavelength signals to a fourth optical signal line.

3. (currently amended) An optical multiplex transmission method comprising:

transmitting an optical signal group across a plurality of nodes in network;  
allowing wherein at any a first node apparatus in said network;  
to receive receiving an a wavelength-multiplexed optical signal group in  
which the plurality of optical wavelength signals are multiplexed;  
to transmit transmitting at least one of the optical wavelength signals  
included in the optical signal group, to a second node apparatus connected with the first node apparatus;  
to convert converting at least one of the optical wavelength signals of first  
wavelength included in said the optical signal group thus received, into the a wavelength-  
converted optical wavelength signal having an arbitrary wavelength respectively of  
second wavelength different from the first wavelength; and

multiplexing said at least one wavelength-converted optical wavelength  
signal with at least one of the optical wavelength signals included in the optical signal  
group received by the second node, wherein said wavelength-converted optical  
wavelength signal is not multiplexed with the optical wavelength signal from which said

wavelength-converted optical wavelength signal was originally converted; and  
~~to transmit said transmitting the resulted multiplexed optical wavelength~~  
~~signals of the second wavelength to a third node apparatus connected with said first the~~  
~~second node apparatus.~~

4. (currently amended) A method wherein a node apparatus in a network of a  
plurality of node apparatuses multiplexes optical wavelength signals and transmits the  
resulting multiplexed optical wavelength signals, comprising:

at any one of said nodes transmitting optical signal groups across a  
plurality of nodes in network;

receiving a first optical signal group from a first optical transmission line,  
and a second optical signal group from a second optical transmission line;

optically multiplexing at least one of the optical wavelength signals  
included in the first optical signal group, and at least one of optical wavelength signals  
included in the second optical signal group, and then outputting the resulting multiplexed  
optical wavelength signals to a third optical transmission line;

optically multiplexing at least one of the optical wavelength signals  
included in each of the first and second optical signal groups, except the optical signals to  
be outputted to the third optical transmission line, and then outputting the resulting  
multiplexed optical wavelength signals to a fourth optical transmission line; and

converting the an optical wavelength signal included in the of first  
wavelength included in said first optical signal group, into the a second converted optical  
wavelength signal whose of second wavelength is different from that of the first optical

wavelength signal, and then transmitting said the second converted optical wavelength signal ~~of the second wavelength~~ to another node apparatus.

5. (currently amended) An optical transmission apparatus comprising:  
a plurality of communication nodes in a network, each of said nodes

having:

an input wavelength demultiplexing unit which demultiplexes a first multiplexed optical signal group having a plurality of including optical wavelength signals ~~of a plurality of wavelengths inputted from a first optical fiber~~, into the optical wavelength signals of the respective wavelengths;

a wavelength multiplexing unit which multiplexes a plurality of optical wavelength signals ~~of a plurality of wavelengths~~, and which outputs the resulting multiplexed optical wavelength signals ~~to a second optical fiber~~;

a specific wavelength dropping unit which externally outputs predetermined optical signals among said the optical wavelength signals ~~of said~~ respective wavelengths demultiplexed by said the input wavelength demultiplexing unit;

a specific wavelength adding unit which outputs optical wavelength signals ~~of having~~ predetermined wavelengths in a second optical signal group including a plurality of optical wavelength signals ~~of a plurality of wavelengths~~ externally inputted, to ~~said the~~ wavelength multiplexing unit; and

a wavelength converting unit which converts ~~the at least one~~ optical wavelength signal ~~of first wavelength~~ among said the optical wavelength signals ~~of said~~ respective wavelengths demultiplexed by said the input wavelength demultiplexing unit,

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into ~~the~~ a wavelength-converted optical wavelength signal having an arbitrary wavelength respectively of ~~second~~ wavelength different from the first wavelength, and which outputs the wavelength-converted ~~said~~ optical wavelength signal of ~~the second wavelength~~ to ~~said~~ the specific wavelength adding unit.

6. (currently amended) An optical transmission apparatus comprising:
- a plurality of communication nodes in a network, each of said nodes having:
- means ~~for deriving~~ which derives at least one optical wavelength signal from within an optical signal group including optical wavelength signals of ~~a plurality of wavelengths inputted from a first optical fiber~~, and ~~for outputting~~ which outputs the derived optical wavelength signal outside ~~said~~ the optical transmission apparatus;
- means ~~for converting the wavelength of~~ which converts at least one of the optical wavelength signals included in the optical signal group into a wavelength converted optical wavelength signal having an arbitrary wavelength respectively; and
- means for outputting ~~said~~ at least one of the wavelength-converted optical wavelength signals ~~of the converted wavelength~~, and ~~at least one of the~~ optical signals which are included in ~~said~~ the optical signal group and whose wavelengths are not converted, ~~to a second optical fiber~~.

7. (currently amended) An optical transmission apparatus according to Claim 5 3, wherein ~~said~~ the wavelength converting unit comprises:
- an optoelectric conversion portion which converts ~~said~~ the optical wavelength

signal into an electrical signal;

    a switching portion which selects a connection route for the electric signal; and  
    an electrooptic conversion portion ~~which converts said electric signal into an~~  
~~optical signal of specific wavelength.~~

8. (currently amended) An optical transmission apparatus according to Claim 5, wherein ~~said the~~ wavelength converting unit includes:

    a switching portion which selects a connection route for said optical wavelength  
signal; and  
    a specific wavelength conversion portion which converts the wavelength of said  
optical wavelength signal into a specific wavelength.

9. (currently amended) An optical network comprising:  
    a plurality of node apparatuses each of which includes the optical multiplexing  
apparatus as defined in Claim 3 5,

    wherein ~~said the~~ plurality of node apparatuses are connected in a scheme selected  
from the group consisting of one liner, a ring shape and a mesh shape.

10. (currently amended) An optical network according to Claim 9 7, further  
comprising:

    means for ~~accepting a~~ determining wavelength conversion methods in the node  
apparatuses relevant to an accepted channel connection request for connecting the first  
and second node apparatuses, ~~and then determining wavelength conversion methods in~~

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~~said node apparatuses relevant to the connection; and~~

means for giving commands of the determined conversion methods to the  
respective node apparatuses.